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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,672	11/11/2003	Barry L. Berson	1023.P005 US	8313

32794 7590 05/07/2007
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EXAMINER

CZEKAJ, DAVID J

ART UNIT	PAPER NUMBER
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2621

MAIL DATE	DELIVERY MODE
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05/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/706,672	BERSON ET AL.
	Examiner Dave Czekaj	Art Unit 2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-33 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-33 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 11 November 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 1/27/06.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
 5) Notice of Informal Patent Application
 6) Other: ____

DETAILED ACTION

Claim Objections

Claim 20 is objected to because of the following informalities: Claim 20 depends from claim 29. The examiner notes that it appears that claim 20 should depend from claim 19. Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi").

Regarding claim 1, Sankrithi discloses an apparatus that relates to airplane ground maneuvering systems (Sankrithi: column 1, lines 12-13). This apparatus comprises "at least one sensor operable to capture images representing scenery outside the vehicle" (Sankrithi: column 3, lines 53-55, wherein the sensor is the camera), "a protective housing enclosing the sensor, wherein the housing further comprises a transparent aperture through which the sensor captures images" (Sankrithi: column 9, lines 1-15, wherein the aperture is the clear lens), "a cleaning mechanism operable to remove obstructions from the aperture" (Sankrithi: column 9, lines 1-15, wherein the window cleaning is the cleaning mechanism), and "an operator display through which images representing the scenery outside the vehicle are displayed" (Sankrithi: figure 6A).

Regarding claim 2, Sankrithi discloses “wherein the sensor comprises a camera” (Sankrithi: column 3, lines 53-55).

Regarding claim 3, Sankrithi discloses “the aperture further comprises a rotating conical surface, wherein an outer surface is wiped within the housing to remove obstructions” (Sankrithi: figures 10 and 11, wherein the rotation is illustrated; column 9, lines 10-15, wherein the wiping is performed by the rubbery squeegee).

Regarding claim 4, Sankrithi discloses “the cleaning mechanism is located to not obstruct the sensors field of view” (Sankrithi: figure 11; column 9, lines 1-15, wherein the wiper housing 452 is mounted to the plane away from the camera).

Regarding claim 5, Sankrithi discloses “the camera further comprises an infrared camera” (Sankrithi: column 13, lines 43-46).

Regarding claim 7, Sankrithi discloses “the cleaning mechanism comprises a cleaning fluid applicator that applies cleaning solution to the aperture” (Sankrithi: column 9, lines 10-15, wherein the cleaning solution is the combination of the air mixed with water, antifreeze, or cleaning solution).

Regarding claim 8, note the examiners rejection for claim 1, and in addition Sankrithi discloses “images representing scenery outside the vehicle are derived from captured images from the sensor” (Sankrithi: column 3, lines 53-55, wherein the camera derives the images).

Regarding claim 9, note the examiners rejection for claim 2.

Regarding claim 10, Sankrithi discloses “the vehicle comprises an aircraft” (Sankrithi: column 3, lines 44-47).

Regarding claim 11, note the examiners rejection for claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as “Sankrithi”).

Regarding claim 6, although not disclosed, it would have been obvious for the cleaning mechanism to comprise a mechanical brush (Official Notice). Doing so would have been obvious in order to help remove debris from the lens of the camera.

Regarding claim 12, note the examiners rejection for claim 6.

Regarding claim 13, note the examiners rejection for claim 7.

Regarding claim 14, note the examiners rejection for claim 1, and in addition, Sankrithi discloses “sending images of a portion of the out-the-window scene from the viewpoint of the sensor” (Sankrithi: figure 6A, wherein the images are sent to the display) and “outputting image of the scenery outside the vehicle to a first display, wherein the display device is positioned to provide the portion of a desired out-the window visual scene in combination with a window

that provides another portion of the desired out-the-window visual scene”
(Sankrithi: figure 6A, wherein multiple views are displayed to the user).

Regarding claim 15, although not disclosed, it would have been obvious to mount the second camera within a protective housing (Official Notice). Doing so would have been obvious in order to protect the camera against the influence of outside elements).

3. Claims 16-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as “Sankrithi”) in view of Jamieson et al. (6665063), (hereinafter referred to as “Jamieson”).

Regarding claim 16, note the examiners rejection for claim 1, and in addition, claim 16 differs from claim 1 in that claim 16 further requires fusing two image together. Jamieson teaches that for manned aircraft, collisions with ground and air based obstacles results in numerous fatalities each year (Jamieson: column 2, lines 32-35). To help alleviate this problem, Jamieson discloses “images from the first and second sensor are fused to create a first fused image” (Jamieson: figures 13A and 14A, wherein the images are fused or combined to produce the output image). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Sankrithi and add the processing taught by Jamieson in order to obtain an apparatus that helps prevent aircraft collisions.

Regarding claim 17, Jamieson discloses “combining the fused image with symbols representing objects” (Jamieson: figures 13A and 14A, wherein the symbols are the circles and lines representing objects).

Regarding claim 18, Jamieson discloses “fusing the first fused image with an enhanced image from at least one of RADAR and a FLIR sensor” (Jamieson: column 16, lines 5-10).

Regarding claim 19, note the examiners rejection for claims 1 and 14, and in addition Sankrithi in view of Jamieson disclose “transform the first sensor image to a viewpoint image from an operator station in the device, wherein the viewpoint image is seized and oriented to conform to the scenery outside the device from the operator station” (Sankrithi: figures 16A and 16B, wherein the image is defined within the field of view and oriented to fit the display; Jamieson: figures 13A and 14A).

Regarding claim 20, Jamieson discloses “the symbols represent information regarding the operation state of the device and the moving objects detected in the image” (Jamieson: column 16, lines 25-30, wherein the operation state information is the velocity, speed, and heading; column 16, lines 31-35, wherein the distance to the object is displayed).

Regarding claim 21, note the examiners rejection for claim 20.

Regarding claim 22, although not disclosed, it would have been obvious to generate a symbol representing weather hazards (Official Notice). Doing so

would have been obvious in order to more easily warn the pilot of adverse weather conditions.

Regarding claim 23, Jamieson discloses “receive an enhanced image in low-visibility conditions” (Jamieson: column 16, lines 5-10, wherein the RADAR or FLIR provide the image in low-visibility conditions).

Regarding claim 24, Jamieson discloses “fuse the viewpoint image with the enhanced image” (Jamieson: figures 13A and 14A).

Regarding claim 25, Jamieson discloses “utilize data from a position sensor to determine the location of the objects” (Jamieson: column 16, lines 31-35, wherein the location of the object is determined with respect to the aircraft).

Regarding claim 26, Jamieson discloses “utilize data from off-board data sources regarding the objects” (Jamieson: figure 36, wherein the transmit/receive fiber bundles receive off-board data).

Regarding claim 27, note the examiners rejection for claim 2.

Regarding claims 28-29, Jamieson discloses the sensor is a RADAR and FLIR sensor” (Jamieson: column 16, lines 5-10).

Regarding claim 30, Sankrithi discloses “generate a common display area associated with two mutually exclusive windows of information on the display device, the area being customized by the operator to display detailed information” (Sankrithi: figure 6A; column 6, lines 23-25, wherein the knob adjusts the displays).

Regarding claim 31, note the examiners rejection for claims 1, 14, and 15, and in addition Sankrithi in view of Jamieson disclose “first and second display devices” (Sankrithi: figure 6A), “outputting the two viewpoints to the first and second display devices” (Sankrithi: figure 6A).

Regarding claim 32, Jamieson discloses “combining the image with symbols representing the objects and primary flight information” (Jamieson: column 16, lines 25-30, wherein the primary flight information is the velocity, speed, heading, and power levels).

Regarding claim 33, note the examiners rejection for claim 18.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-6672535	01-2004	Brunner Jr et al.
US-5415549	05-1995	Logg
US-5574497	11-1996	Henderson et al.
US-7002600	02-2006	Okada et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Mon-Thurs and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJC

APR 20
PRIVATE EXAMINER